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An Essay

on the Medical Topography & Autumnal Fever
of Washington North Carolina

by

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On the Medical Topography and Autumnal Fever of Washington N.C.

To the eye of the medical observer, the topography of the lower section of North Carolina presents objects of interesting speculation. In no part of our country, can we more plainly trace the operation of those impalpable agents, that have been acknowledged by the universal suffrage of physicians as the origin of autumnal diseases. To notice in detail every thing that might be comprehended in a topographical sketch, would extend this essay beyond proper limits. I shall briefly allude to the more prominent local peculiarities, necessarily omitting much that might be considered as intimately connected with the subject.

Washington is situate on the North side of Pamlico river, about thirty miles from its entrance into the Sound, from which latter place to the Ocean the distance is computed at forty miles.

Latitude 35°30"

Longitude 77°10".

The river at the town is about 3/4 of a mile in width. The banks on the North side are elevated and rarely overflown; while those,

forming the opposite shore, are low and liable to frequent inundations. The land extending back for a mile or two is swampy and heavily timbered with Gum, Laurel, Cypress &c, with a very thick under growth of reeds, which completely exclude the rays of the sun at all seasons. Fortunately for the inhabitants of Washington, this immense pocosin can never be reclaimed. What the ultimate effect of this measure would be upon their health it is impossible to say; its immediate one would doubtless be highly prejudicial. This swamp continues for some miles down the river, and gradually receding from it, terminates in Chocowinity bay.

The opinion that this Bay and swamp constituted, at one time, the bed of the river has pretty generally obtained among the older inhabitants of the country: and there are many circumstances that go strongly to corroborate such a supposition. It is not unusual for persons to discover on the margin of the high land, forming their southern boundary, marine substances, such as are frequently found on the banks of our rivers, and which could not possibly have been deposited by any inundation of the present day. They were then probably thrown up, when the situations now occupied by them constituted banks or

shores to the river. A gentleman, who resides near the commencement of this high land, discovered some time since, at the distance of twenty five feet below the surface, a stratum of vegetable matter but partially decomposed, which closely resembled the present covering of the marshes, of its identity with which, he was firmly persuaded. Another highly intelligent gentleman, in the same vicinity, discovered, at the distance of thirty feet below the surface, the trunk of a tree lying, as it had probably been pressed by the immense weight upon it, on an inclined plane; and near it, the stump to which originally it had been attached. These circumstances taken in connection with the general aspect of the country, go strongly to justify the conclusion, that the spots at which these phenomena were observed, must have been, at a remote period, paludal, and formed marshy banks or margins to the river, of which Chocowinity bay and swamp constituted the bed. How this change was effected - whether by some convulsive throe of nature or by the slower process of gradually deserting its former bed, it is impossible even to conjecture. On this point, tradition furnishes nothing to aid us. Enough, however, is

known to assure us that some great and important change has been wrought in the aspect of the country. and their existence in the situations mentioned will prevent a successful application of Buffon's views to the explanation of these phenomena.

At the upper or west end of the town, the land is high and sandy, for perhaps a mile, when Tranter's creek a bold and rapid stream in its junction with Tar river forms the Pamlico. At the east, another creek of considerable size makes in, and empties itself, just below the town. The water in the river is generally fresh except when strong easterly winds prevail. Masters of vessels in filling water for use at sea, invariably prefer it to the pump or well water. It is said to keep much longer and better.

The land in the vicinity, and the remark may be extended to all the eastern section of North Carolina, is flat and generally sandy. Swamps and morasses, particularly in the neighborhood of water courses are numerous and often extensive. As you recede however from the river, these become fewer and the land more elevated but less fertile. The inhabitants here obtain infinitely better water and enjoy better health. In the former

situations Corn and Cotton are cultivated to considerable advantage – while the inhabitants of the latter are mainly dependant upon the manufacture of naval stores.

The mineralogy of this and indeed of every part of our State, is but imperfectly known. In fact, untill the last few years, nothing had been done towards its investigation. The Legislature have lately secured the services of Professor Mitchell, who has engaged in this important and interesting undertaking, with an ardour that promises the most distinguished success. From his industry and acknowledged abilities much may be expected. In the vicinity of Washington there are several springs said to be possessed of active chalybeate properties, and to have been useful in convalescence from our autumnal fevers, and in some female complaints.

Our summers are extremely variable and irregular, sometimes pleasant throughout, at other times marked by intense heat. The hot weather generally commences about the first of June and terminates towards the close of September. The greatest degree of heat occurs about the solstice, but that of August and September is far more

oppressive and disagreable. The thermometer, during this period ranges from eighty to ninety of Fahrenheit. The same variety is observed with regard to rain. Sometimes the fervors of summer are tempered with regular and refreshing showers - sometimes by tremendous gusts amounting almost to tornadoes - at other times, the distillation is copious and incessant, inundating the country in every direction and destroying the crops to a corresponding extent. Then again the summers are dry, vegetation declines, and the earth presents a surface, as parched and arid as the plains of Hindostan.

That the diseases of this section of country, and the remark perhaps may be extended to the whole continent are gradually becoming more complex and diversified, is generally acknowledged by those whose opportunities of observation have enabled them to determine with accuracy. To what cause this variation may be attributed, it is perhaps impossible to say. Whether the gradual changes that are taking place in our climate, as well as upon the face of the country have produced this important revolution, or whether it may be traced to changes that have been wrought in the moral and physical constitution

tution or its inhabitants, remain questions of conjecture or speculation.

Each particular season brings with it its own pathetic and appropriate epidemics, according as the different organs or tissues may be morbidly predisposed. In the winter and spring the lungs and their appendages are mostly liable to suffer; in the summer and fall, the mucous tissue of the stomach and bowels and the urinary apparatus, with that general morbid condition of the system denominated Fever. To the discussion of this latter class I shall confine my remarks.

More than a century has elapsed since autumnal diseases were referred by Lancisi to miasmatic influence and this has been abundantly confirmed by succeeding observers. The extremely subtile nature of these impalpable agents will perhaps forever prevent their subjection to chemical or mechanical experiment. They are known however chiefly to abound in low and marshy tracts of country, and to be produced by the combined influence of heat and moisture upon soils peculiarly constituted. In a series of interesting papers on Epidemics, Professor Chapman has collec-

ted much that is valuable on this subject — to them I beg leave to refer.

Independant of these general sources of disease, there are in Washington, and we presume in all places where police regulations are lax and inefficient, others of an internal nature: such as accumulations of vegetable matter, frequently the offal of the kitchen, and collections upon the wharves thrown from vessels. The streets too are narrow and rarely clean. These circumstances will not appear trivial or unworthy of notice, when it is recollected, that from exceeding small points disease is radiated. These causes are aided in their operation by others more immediately exciting — as excesses of every kind — exposure to the heat of midday or to the cold damp dews of night &c.

In its character and appearances our fever is as diversified as the climate and season under which it exists. As a general proposition however, it may be stated, that two distinct forms of it are frequently to be met with. Of these the first occurs chiefly in the summer and early part of the fall, and is generally more likely to attack the sanguine and plethoric. It comes on frequently without the least premonition, having a cold stage more or

lps distinctly marked succeeded by high fever, with pain in the head and back - pulse full and voluminous or hard & wiry - skin hot and dry - respiration hurried with a tendency to delirium - eyes red and injected with great general uneasiness and restlessness. The stomach is extremely irritable rejecting whatever is taken in and the epigastrium is tender upon pressure. Exacerbations commonly take place in the evening followed by a very indistinct and imperfect remission.

The most careless examination of the case will point out the necessity of prompt and copious depletion. General bloodletting will be indispensable in most cases, and should be repeated if the most distressing and prominent symptoms are not alleviated. Local detractions of blood from the epigastric and from the head should a determination to that organ exist, will effectually contribute to the relief and comfort of the patient. Emetics are absolutely prohibited by the presence of irritation or inflammation in the stomach. It is not advisable to resort to the use of purgatives than merely to obviate or prevent an accumulation of feculent matter in the alimentary canal;

and this is perhaps best accomplished by Calomel in moderate doses succeeded by Castor oil or enemata. These measures aided by cold applications & blisters, followed towards the close of the disease by some mild diaphoretic will generally prove sufficient for the cure.

The other form of Fever presents itself under somewhat different appearances and may be said to constitute the true Bilious Fever of the South. Neither sex, age or temperament can shield an individual against its attack, and the most careful observance of all those precepts for the protection of health that have been detailed by successive writers upon the subject, will often be insufficient to secure against its invasion. It is generally ushered in by a universal languor as well mental as corporeal; with yawning and stretching, followed by a distinctly marked cold stage. The ordinary phenomena of fever are soon developed — with a pulse quick, irritated and rather contracted in volume; not much acuteness of pain but great restlessness, nausea and vomiting. The bowels are generally constipated, sometimes however, in a state of hypercharge irritation.

The eyes are muddy and deprived of their accustomed brilliancy, the tongue red in the centre, or covered with a yellowish coat, the respiration increased and sighing. In a few days this state of comparative oppression gives way to one of more unequivocal excitement. The pulse now becomes full and voluminous with some degree of tension - the skin hot and dry, pain in the head presently in attendance, with a throbbing sensation peculiarly distressing. The discharges from the bowels are small and offensive. A tenderness more or less distinct is felt over the region of the stomach extending itself frequently to the right hypochondrium. After these symptoms have continued for some days they abate or are followed by others of an alarming character as wild delirium - subsultus tendinum - incontinence of urine and fæces. The surface becomes cold and is covered with a dewy, clammy perspiration, and death ultimately closes the scene. Cases sometimes occur where the temperature of the surface is not at all increased and the pulse is little or no arterial excitement. These have been generally supposed to be more unmanageable. Their anomalous character

has been explained by Dr. Strong by attributing it to a Congestion in the large vessels about the heart: and this would seem satisfactory for as soon as the balance of the circulation has been restored and unequivocal evidences of excitement manifested they yield to the usual methods of treatment.

No light has been shed upon the nature of these affections by post mortem examinations. But judging from the phenomena constantly exhibited in the progress of the disease and reasoning from analogy furnished by dissections elsewhere prosecuted, we can have no hesitation in pronouncing their Pathology. Seated primarily in the membranes and cellular tissues, and consisting in inflammation, more or less intense, yet by its mischievous tenacity, the disease is extended so as to involve ultimately every organ and tissue of the animal machine.

Guided by these pathological views, our earliest aim, it will, of course, be directed to the correction of this condition - and in the selection of the means best adapted to this end our attention is earliest arrested by the importance of bloodletting -

For the employment of this remedy we must be guided by the general aspect of the disease and the age and vigour of the patient. The propriety of its repetition will alone be determined by its effect upon the disease. Conversing with this, we will derive most decided benefit from the local abstraction of blood, by cups or leeches, from the epigastric and hypochondriac regions. Leeches are generally preferable, as they excite no irritation from tourniquet and by allowing them in considerable quantities, we may obtain as copious a discharge as may be necessary. The nausea so frequently an attendant upon this fever and so distressing to the patient, will be more speedily and effectually relieved in this way than by the whole tribe of antiemetics. Indeed, many of these articles are decidedly injurious, operating as the vomiting must, a direct stimulus upon a surface already inflamed. Yet in cases known, been premised and the stomach free of the inflammatory disease, an emetic may be exhibited under certain restrictions. For this purpose Ipecacuanha should be preferred, of which fifteen or twenty grains may be given. When this remedy has been used under favorable circumstances we may often perceive an

abatement of the most distressing symptoms - the nausea with a view to diet - thirst diminished and the patient's general condition vastly more comfortable. As a general rule however it will not be necessary to employ this remedy; indeed in a majority of cases it will be safer not to do so. Mercurial purges should not succeed - Calomel in pretty large doses, as fifteen or twenty grains, aided in their operation by Castor oil or the neutral salts is generally preferred. Besides removing from the intestinal canal its putrescent contents, this seems to exert a considerable influence upon the liver and other secreting organs which at this period of the disease are torpid. It is at the period of the disease when the skin is still hot and dry, with thirst and restlessness, that sponging with cold water, or with vinegar and water, may be instituted with immense advantages. It rarely fails to diminish the parched constriction of the skin, tranquillize the system and dispose to sleep. To derive from this unctuary measure its full effect it should be often repeated; and to it, injections of cold water will be found a most valuable adjuvant.

After the employment of these remedies we not unusually observe a considerable disposition to diaphoresis, which may be aided by the neutral mixture or any of the mild purgative preparations. To obviate costiveness and remove the intestinal accumulations that may from time to time be produced and prove the source of general uneasiness and irritation Calomel in small doses may be given with any of the neutral salts; the sulphates which, alone will often answer exceedingly well, the sulphate of magnesia being generally preferred.

But little discrepancy of opinion exists in this country in regard to the importance of blisters. No man, it appears to me, can practice as a climate like ours and question the utility of their employment. As a means of subduing local disease no one contests the propriety of their employment. Equally efficacious are they in removing that condition of the capillary system upon which the maintenance of the febrile movement seems chiefly to depend. Almost simultaneous with their application with this latter view, a uniform glow is diffused over the surface, before parched & constricted, always

a harbinger of good import and omens of a favorable and speedy solution. To be most effectual they should be applied to the back of the neck, the stomach and extremities. When the excitement is unequal we should employ the tepid bath, blisters, stimulating frictions with warm drinks.

A variety of deviations from the course that has been detailed will frequently be observed. These the practitioner should carefully examine, and adopt such means of relief as his judgment may enable him to select.

It will be sometimes be necessary - and particularly so in protracted cases and where the remissions are distinct and well marked to exhibit the Sulphate of Quinine or some other tonic. Some degree of caution however is requisite in determining upon the proper period for its administration, for if employed before the system is prepared for its reception it may aggravate instead of alleviate the case.

It will be perceived that in the foregoing sketch I have said nothing of mercury. This remedy is rarely employed in the section of country whose diseases I have attempted to de -

scribe, nor should I be disposed in recent cases, to anticipate a great deal from its employment

During the progress of the disease the diet should be of the mildest character, as rice water, toast water or barley water. As articles of drink we may recommend besides simple water, lemonade apple water or any slightly acid beverage.

Hitherto, in the treatment of southern fevers, physicians have relied too exclusively upon purgatives. This cannot be productive of the end that is proposed, as continued purgation will necessarily produce an extremely irritable condition of the intestines and exhaust the patient without conquering the disease. It has been practised from a belief that active catharsis was necessary to carry off the inordinate secretion of bile, when a closer observation would convince us, that the liver, instead of secreting an undue quantity of this fluid, is in fact torpid and congested. The judicious physician then, instead of harrassing his patient with successive cathartics, will direct his remedies to the relief of that organ; and by the application of leeches or cups, blisters and the subsequent exhibition of the mild mercurials endeavor to remove its engorgement.

To watch with eager eyes the operations of Nature and aid or restrain them as an enlightened discrimination may direct, constitutes the excellence as it unquestionably does, the success of the physician. Hence he, who studies her most attentively and scans her ways with the greatest precision and accuracy, will never fail to prove the most useful and fortunate practitioner. It has been, and perhaps still is, the highest opprobrium of our science, that those engaged in the prosecution of it, have been too attentive to the names of diseases. It is to the successful cultivation of modern pathology, that we are indebted for the light that will ultimately dispel the clouds that have obstructed our advancement. It is cheering no less to the philanthropic, than to the scientific mind to observe the astonishing success with which rational medicine has been pursued during the present century. Such indeed has been the rapidity of its advancement, as justly to constitute this period an era in its history. Much remains yet to be accomplished - and from the zeal and talent engaged in the pursuit, we may anticipate the most cheering and favorable results, results that will render it, what it should always have been, a Science of reason and induction